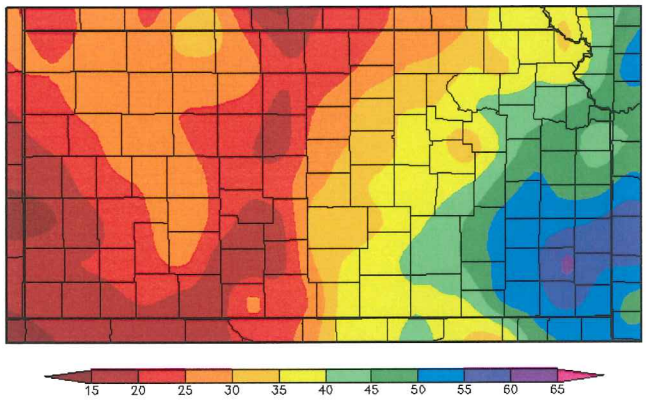
Kansas- Nebraska Big Blue River Compact Meeting 2010
Report by Kansas Department of Agriculture- Division of Water Resources
Topeka Field Office
May 2010

Climatic Conditions- Precipitation & Temperatures

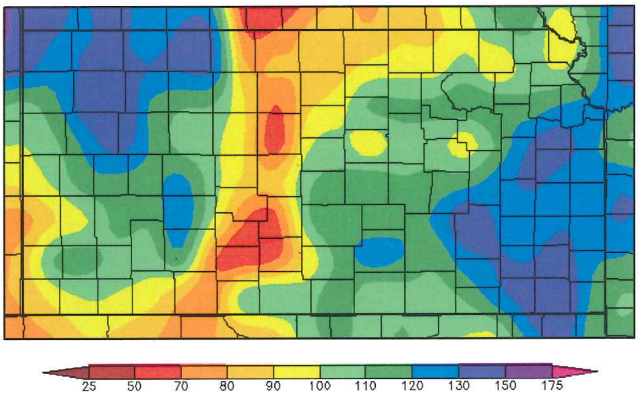
The High Plains Regional Climate Center reported 25 to 40 inches of precipitation in calendar year 2009 for the Big and Little Blue River basin area, including the Mill Creek subbasin, against an average annual of 30 to 35 inches in this region. Average or above average annual precipitation was received in much of the basin with the far northwest portion of the basin receiving less than average precipitation. This pattern has continued from last year.

Precipitation (in)
1/1/2009 – 12/31/2009



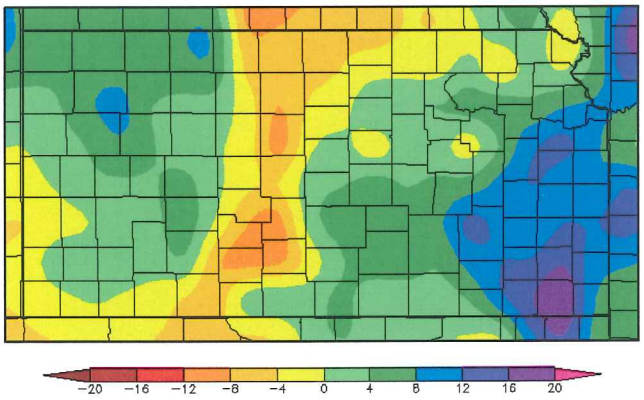
Generated 1/11/2010 at HPRCC using provisional data. NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
1/1/2009 – 12/31/2009



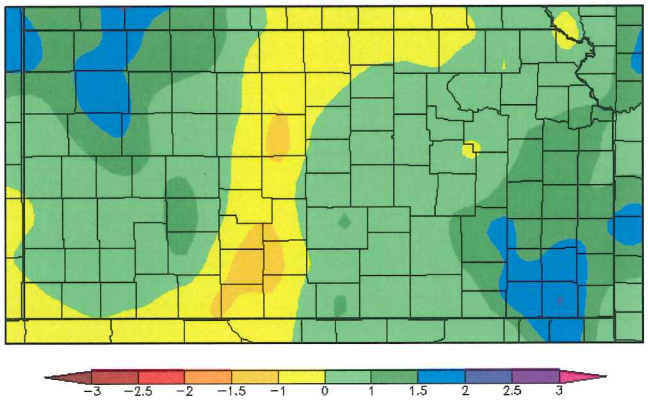
Generated 1/11/2010 at HPRCC using provisional data. NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2009 – 12/31/2009



Generated 1/11/2010 at HPRCC using provisional data. NOAA Regional Climate Centers

12-Month SPI
1/1/2009 – 12/31/2009



Generated 1/11/2010 at HPRCC using provisional data. NOAA Regional Climate Centers

Temperatures for the calendar year 2009 ranged from nearly 8 degrees above average in the lower Big Blue to nearly 4 degrees below average in the upper Big Blue.

The Standardized Precipitation Index (SPI's) reflects long-term precipitation patterns and compares the precipitation for 12 consecutive months with the same 12 consecutive months during all previous years of available data. Because SPI's with longer periods of data reflected tend toward zero if no specific trend is taking place and because the SPI tends towards zero throughout the basin, it still appears that no trend is showing at this time.

Administration Activities

Minimum Desirable Streamflow (MDS) on the Big Blue River at the Marysville U.S.G.S. gage ranges by month from 65 cubic feet per second (CFS) (fall) to 150 cfs (spring). MDS on the Little Blue River at the Barnes U.S.G.S. gage ranges by month from 60 cfs (fall) to 150 cfs (spring). No MDS administration occurred in this basin, or any other Eastern Kansas basin, in calendar year 2009.

Minimum Desirable Streamflows (cfs)

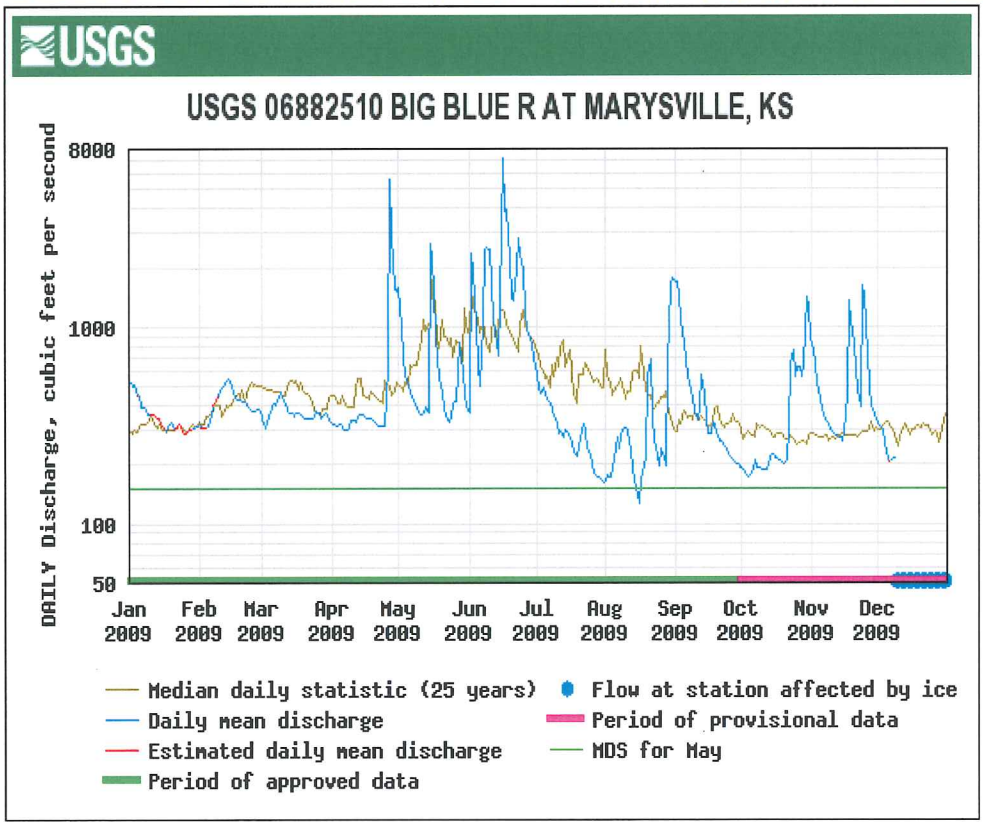
Watercourse	Month J	F	M	A(a)	M(a)	J(a)	J	A	S	O	N	D
Big Blue Marysville	100	100	125	150	150(d)	150(d)	80	90	65	80	80	80
Little Blue Barnes	100	100	125	150	150(d)	150(d)	75	80	60	80	80	80

(d) Subject to the stateline flows contained in the Blue River Compact.

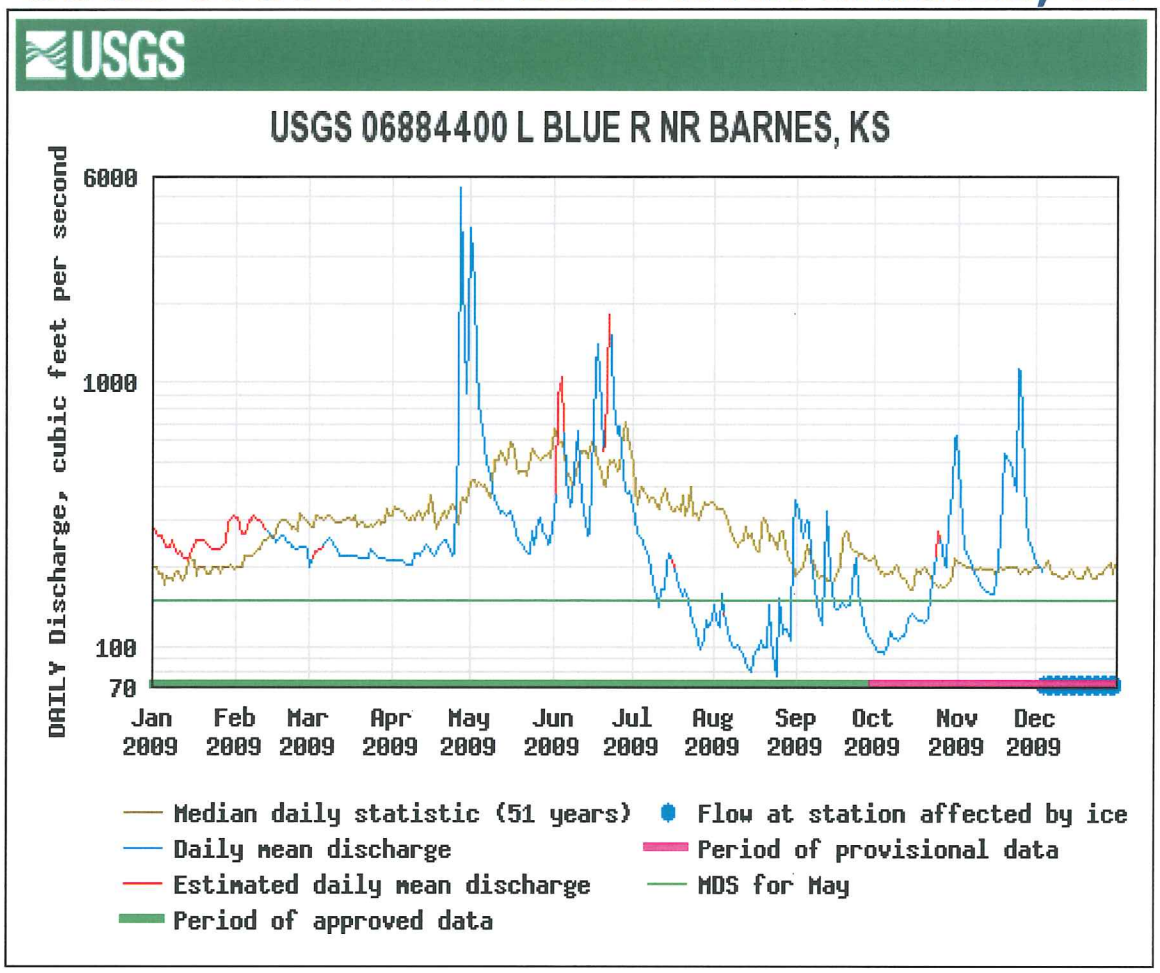
Streamflow

Streamflow in the basin remained above median daily statistic for both gages for nearly the entire calendar year. Statistics reflect 25 years of data at Marysville and 51 years of data at Barnes. There were no days that streamflow fell below the MDS value at the gage at Marysville, Kansas, on the Big Blue River. There was one day of streamflows below the MDS value in August (August 25) at the gage near Barnes, Kansas, on the Little Blue River, however precipitation occurred that made the event one day in duration.

USGS 06882510 BIG BLUE R AT MARYSVILLE, KS

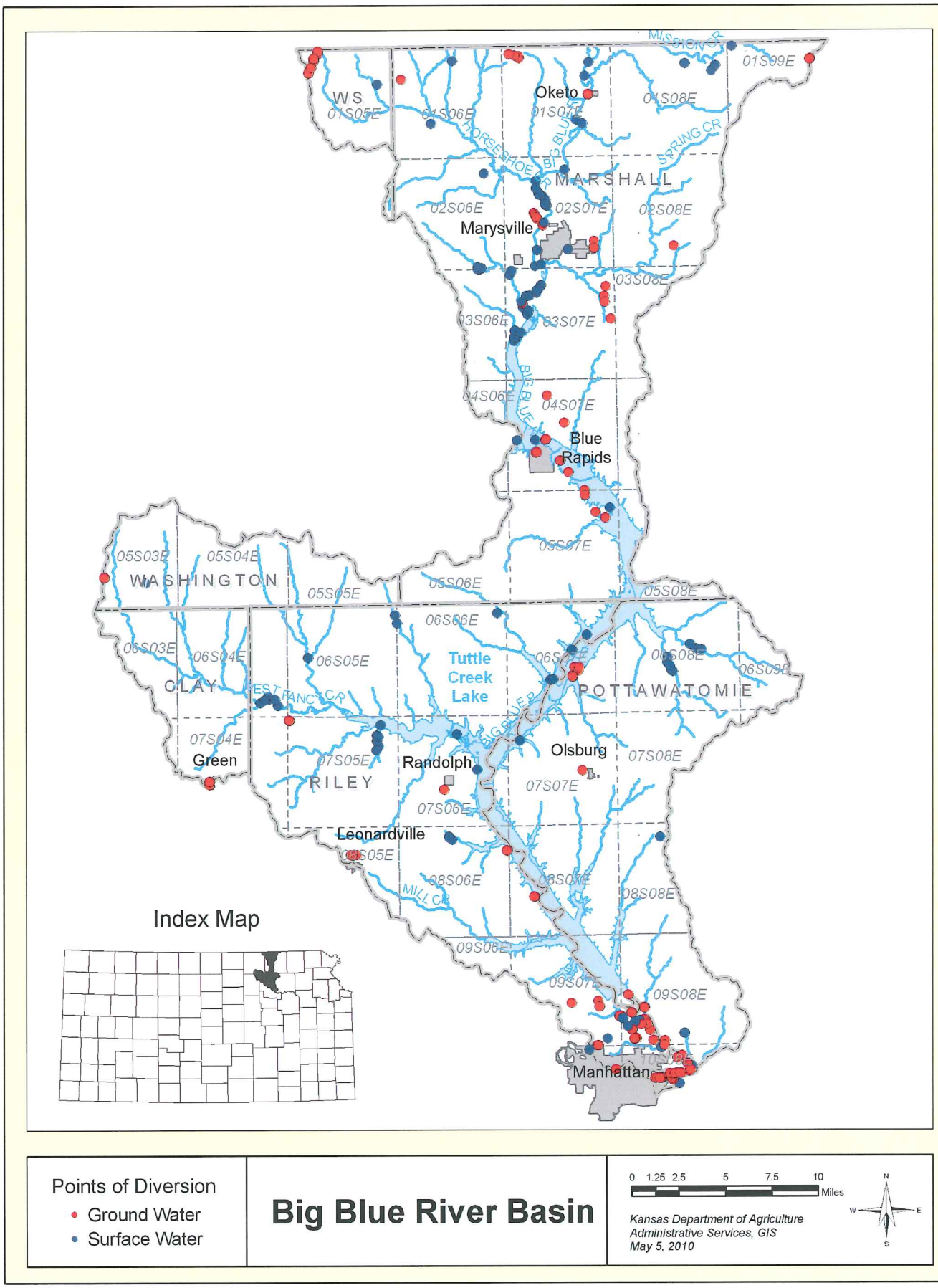


USGS 06884400 L BLUE R NR BARNES, KS



New Well Development

In calendar year 200 in the Big Blue River basin, the Kansas Department of Agriculture Division of Water Resources approved 5 new groundwater permits, covering one new irrigation project and 4 granting additional rights from existing municipal wells that benefit from assurance releases from the Kansas River Water Assurance District below Tuttle Creek Lake, and 2 new surface water permits, covering evaporation from a watershed reservoir and a recreational reservoir. In the Little Blue River basin, the Division approved 2 groundwater permits, which covered one new well for a local school district and one existing well for additional rate and quantity on an existing irrigation project. 4 permits were granted in the Mill Creek basin; 1 on an existing municipal supply well, 1 for a new irrigation project, and 2 for stockwatering operations. Additionally, three Basin Term Permits, one each for Big Blue, Little Blue, and Mill Creek, were granted for the Trans-Canada Keystone Pipeline construction.



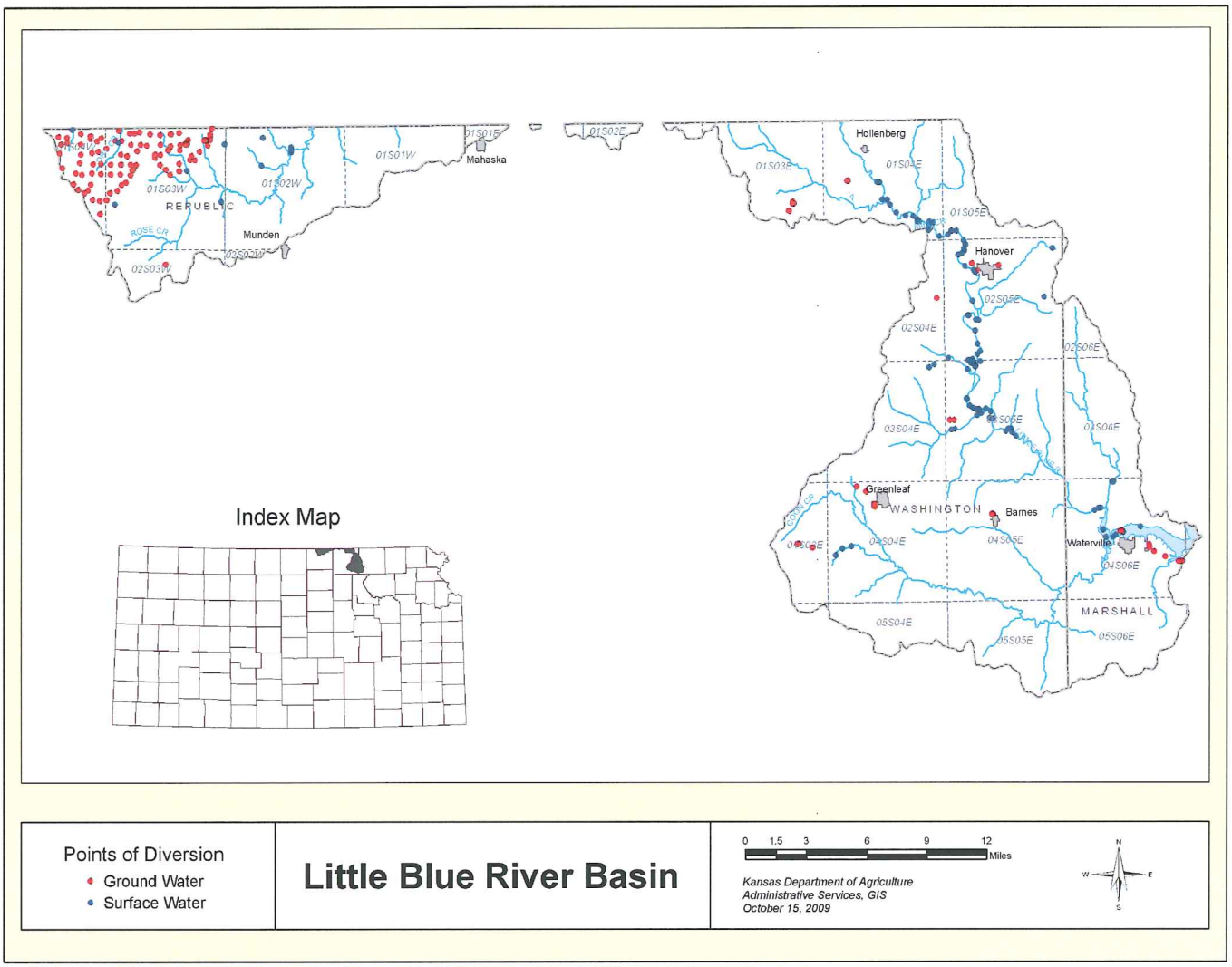
Points of Diversion
- Ground Water
- Surface Water

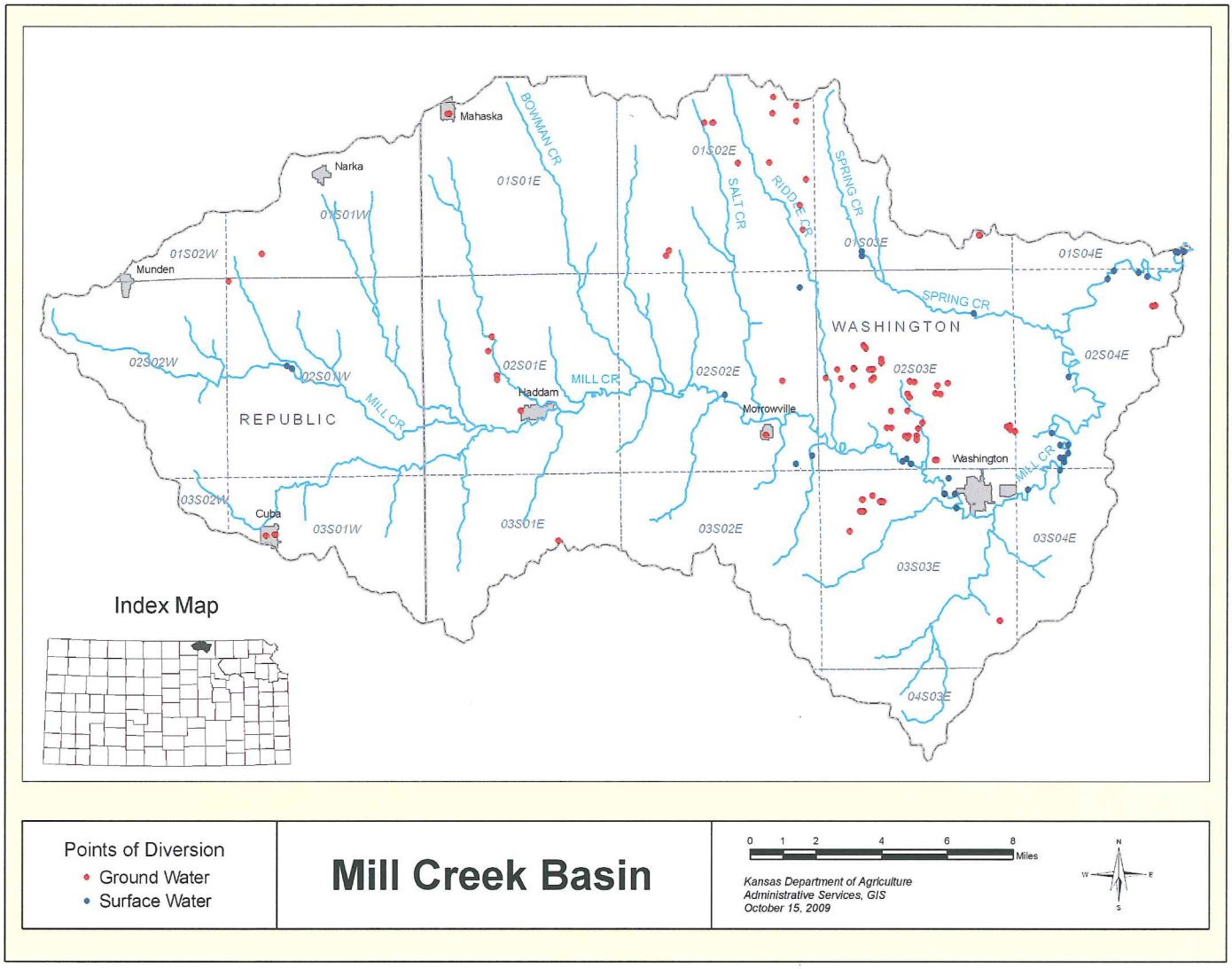
Big Blue River Basin

0 1.25 2.5 5 7.5 10 Miles

N
W E
S

Kansas Department of Agriculture
Administrative Services, GIS
May 5, 2010

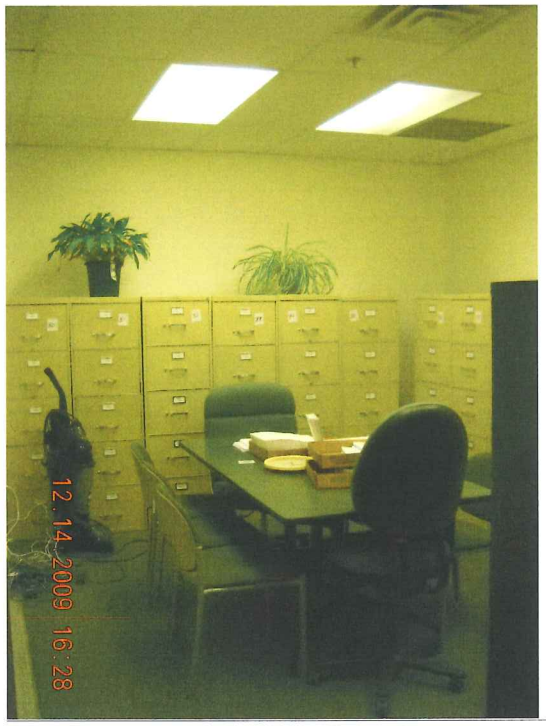

REPUBLIC
Munden
Mahaska
Hollenberg
Hanover
Greenleaf
WASHINGTON
Barnes
Waterville
MARSHALL
ROSE CR
Index Map
Points of Diversion
Ground Water
Surface Water
Little Blue River Basin
0 1.5 3 6 9 12
Miles
Kansas Department of Agriculture
Administrative Services, GIS
October 15, 2009



Kansas Department of Agriculture's Topeka Field Office Moved to Forbes Field

Prior to December 14, 2009, the Topeka Field Office (TFO) was located in downtown Topeka in the same building that houses the Division of Water Resources headquarters. Because of this, the hard files of all the water rights stored in the TFO for the eastern 1/3 of the state of Kansas had their "back-up" microfilm being stored in the same building. For obvious reasons, this was a concern. In 2009, the Kansas Department of Agriculture's Laboratory, housed in Building 282 at Forbes Field in Topeka, was being renovated. Due to that renovation, a unique opportunity arose whereby the building floor plan was able to be revised to accommodate the Topeka Field Office, including an area of garage that could hold all the field equipment and supplies. The TFO moved out to the KDA Laboratory building in mid-December. Incidental benefits of the move include easy interstate access in all directions and the ability to have field vehicles right at the building, which facilitates field work.

The new Topeka Field Office contact information is:
Kansas Department of Agriculture
Division of Water Resource, Topeka Field Office
PO Box 19323
Building 282, Forbes Field
Topeka, Kansas 66619-0323
Telephone: (785) 862-6300
Fax: (785) 862-9110
www.ksda.gov/dwr



Metering

On January 4, 2010, the Chief Engineer Division of Water Resources issued the Order Regarding the Installation of Water Flowmeters in the Little Blue River basin and the Order Regarding the Installation of Water Flowmeters in the Mill Creek basin requiring the installation of totalizing water flowmeters on all non-domestic, non-temporary diversions of water by December 31, 2010. The Little Blue River Order was sent to the owners of 189 water right files and the Mill Creek Order was sent to the owners of 76 water right files. In consideration of continued resource constraints and budgetary uncertainties, the Big Blue River Order was not yet initiated (approximately 142 water right files). Field Office staff conducted a public meeting in each basin to inform owners that attended why the Order was initiated, to whom it was issued, what the Order means and how to gain compliance with the Order. The meeting also included a refresher about water rights under the Kansas Water Appropriation Act.

While, as previously described, the KDA-DWR requires that the totalizing water flowmeter installed be on the List of Certified Water Flowmeters maintained by the Division, be installed in a manufacturer approved measuring chamber with flow-straightening vanes, have a specific amount of upstream and downstream spacing, and be protected by a seal, as well as meeting all manufacturer-required installation specifications, the Division's main goal in issuing meter orders is to allow the reporting of accurate water use data annually and for potential administration to be carried out. We identify accurate as operating within 6% of the Divisions certified test meters. If a previously-installed water flowmeter tests to within the 6% tolerance and is accurately measuring water diverted, but does not have the required chamber or flow-straightening vanes, or does not meet the required 5 up and 2 downstream pipe diameters of unobstructed spacing, we will grant meter exception identifying that as long as the installed meter works accurately and no piping changes occur, we will not take enforcement action on the installation, however if they replace the meter or make piping changes, they must meet all current requirements at the installation.

We have been inspecting the installations by county and have nearly all previously or newly installed meters inspected in Republic and Marshall Counties and nearly all groundwater installations in Washington County. We plan to test for exceptions during June 2010 and check all new installations then, as they will have to be 100% per requirements.

BRO- Blatant Recurring Overpump Program

See "Consequences of Overpumping" Fact Sheet.

Again in 2009, the BRO program focused on state-wide overpumping. In this Basin and surrounding area, thresholds were Top Tier- overpumps of 100 AF or more, Second Tier- overpump >10 AF but less than 100 AF, and Tier Three- overpumpers from BRO program previous years. We issued no civil penalties or any Notices of Non-Compliance in these basins.

Tuttle Creek Dam

On September 11, 2009, the US Army Corps of Engineers announced the completion of the Tuttle Creek Dam Safety Assurance Project. The foundation stabilization work at Tuttle Creek Dam was completed first. This modification was part of the $175 million Tuttle Creek Dam Safety Assurance Project, which was undertaken to improve the safety of the dam, which is 157-foot-tall and 7,500-foot-long rolled earth and rockfill embankment structure. The concern was that without the improvements, a 5.7 to 6.6 magnitude earthquake could inflict significant damage to the dam because the dam is near the Humboldt Fault, which has produced an earthquake with a magnitude of 5.1. The foundation work was performed by contractor Treviicos South Inc. of Boston. They built 351 underground concrete walls beneath about 1 mile of the downstream slope of the dam. Each wall is 4 feet wide, 45 feet long, and 60 feet deep. The walls will support the dam, preventing failure during an earthquake. The final wall was completed on August 31, 2009.

A temporary Dam Failure Warning System to warn downstream public of potential danger was no longer necessary once work was complete and was removed in November 2009.

The final work on the dam involved structural modifications of the 18 spillway gates east of the dam. The gates were painted, and work was completed in November 2009. Construction equipment will remain at the dam for another year to restore the downstream side of the dam and place riprap on the upstream and downstream slopes. The Corps reported the Project as being about $75 million under budget and completed two years ahead of schedule.

Trans Canada Keystone Pipeline

The 2,148-mile Keystone Pipeline is planned to transport crude oil from Hardisty, Alberta to U.S. Midwest markets at Wood River and Patoka, Illinois and to Cushing, Oklahoma. The U.S. portion of the project includes construction of approximately 1,379 miles of pipeline and pump stations, with current work being performed near Marshall County Kansas, and expected to be fully underway within the month. The Kansas to Oklahoma portion of the line is 36 inch pipe and will be buried a minimum depth of cover of four feet, depending on land use.

Keystone has contracts with shippers totaling 495,000 barrels per day with an average term of 18 years. The Company had identified that construction of Kansas facilities would be completed in 2009 with a system in-service date of operation of 2009. The Company appears to be behind-schedule.